

**Part 1 General**

**1.1 WASTE MANAGEMENT AND DISPOSAL**

- .1 Excavated asphalt paving is to be removed and delivered to asphalt plant, capable of recycling material. Provide name of asphalt recycling facility to be utilized within 5 days of award of contract. Do not change recycling facilities without prior approval of Departmental Representative.

**Part 2 Products**

**2.1 EQUIPMENT**

- .1 Keying in to existing pavement
  - .1 Use cold milling, planning or grinding equipment with automatic grade controls capable of removing part of pavement surface to depths or grades indicated.
- .2 Removal
  - .1 Use equipment capable of stripping off existing asphalt paving without contaminating with underlying materials.

**Part 3 Execution**

**3.1 PREPARATION**

- .1 Prior to beginning removal operation, inspect and verify with Departmental Representative areas, depths and lines of asphalt pavement to be removed.

**3.2 PROTECTION**

- .1 Protect existing pavement not designated for removal in addition to surrounding structures and features. In event of damage, immediately replace or make repairs to approval of Departmental Representative at no additional cost.

**3.3 REMOVAL**

- .1 Remove existing asphalt pavement as indicated.
- .2 Use equipment and methods of removal and hauling which do not damage or disturb underlying pavement and granulars.
- .3 Prevent contamination of removed asphalt pavement by topsoil, underlying gravel or other materials.
- .4 Provide for suppression of dust generated by removal process.

**3.4 DISPOSAL OF MATERIAL**

- .1 Dispose of removed asphalt pavement to approved facility capable of recycling asphalt material.
- .2 Provide weigh bills of material delivered for recycling as proof of conformance.

**3.5 SWEEPING**

- .1 Sweep remaining asphalt pavement surfaces clean of debris resulting from removal operations using rotary power brooms and hand brooming as required.

**END OF SECTION**

**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Section 31 23 10 – Excavating, Trenching and Backfilling.
- .2 Section 32 91 19.13- Topsoil Placement and Grading.
- .3 Section 32 92 23- Sodding.

**1.2 REFERENCES**

- .1 CSA International
  - .1 CSA S350-M1980(R2003), Code of Practice for Safety in Demolition of Structures.

**1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

**1.4 SITE CONDITIONS**

- .1 Review "Designated Substance Report" and take precautions to protect environment.
- .2 If material resembling spray or trowel-applied asbestos or other designated substance be encountered, stop work, take preventative measures, and notify Departmental Representative immediately.
  - .1 Proceed only after receipt of written instructions have been received from Departmental Representative.
- .3 Notify Departmental Representative before commencing demolition of pump station.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not used.

**Part 3 Execution**

**3.1 EXAMINATION**

- .1 Inspect pump station and vicinity with Departmental Representative.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
- .3 Notify and obtain approval of utility companies before starting demolition.
- .4 Disconnect, cap, plug or divert, as required, existing utilities within the property where they interfere with the execution of the work, in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and previously capped or

plugged services on the site and indicate location (horizontal and vertical) on the record drawings. Support, shore up and maintain pipes and conduits encountered.

- .1 Immediately notify Departmental Representative and utility company concerned in case of damage to any utility or service, designated to remain in place.
- .2 Immediately notify the Departmental Representative should uncharted utility or service be encountered, and await instruction in writing regarding remedial action.

### **3.2 PREPARATION**

- .1 Temporary Erosion and Sedimentation Control:
  - .1 Refer to Section 01 35 43 Environmental Procedures.
  - .2 Inspect, repair, and maintain erosion and sedimentation control measures during demolition.
  - .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal after completion of demolition work..
- .2 Protection of In-Place Conditions:
  - .1 Prevent movement, settlement, or damage to adjacent utilities to remain in place. Provide bracing and shoring required.
  - .2 Keep noise, dust, and inconvenience to occupants to minimum.
  - .3 Do Work in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .3 Removal:
  - .1 Remove items as indicated.

### **3.3 DEMOLITION**

- .1 Execute work in accordance with CSA S350.
- .2 Do excavation and backfilling in accordance with Section 31 23 10.
  - .1 Backfill Type 1 Fill: refer to Section 31 23 10.
- .3 Reinststate surface with 150mm topsoil and sod refer to Section 32 91 19.13 and Section 32 92 23.

### **3.4 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**

**Part 1 General**

**1.1 REFERENCES**

- .1 Export and Import of Hazardous Waste Regulations SOR/2002-300.
- .2 National Fire Code of Canada 2005.
- .3 Transportation of Dangerous Goods Act (TDG Act) 1999, (c. 34).
- .4 Transportation of Dangerous Goods Regulations (T-19.01-SOR/2003-400).

**1.2 DEFINITIONS**

- .1 Dangerous Goods: product, substance, or organism that is specifically listed or meets hazard criteria established in Transportation of Dangerous Goods Regulations.
- .2 Hazardous Material: product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.
- .3 Hazardous Waste: any hazardous material that is no longer used for its original purpose and that is intended for recycling, treatment or disposal.
- .4 Workplace Hazardous Materials Information System (WHMIS): a Canada-wide system designed to give employers and workers information about hazardous materials used in workplace. Under WHMIS, information on hazardous materials is provided on container labels, material safety data sheets (MSDS), and worker education programs. WHMIS is put into effect by combination of federal and provincial laws.

**1.3 SUBMITTALS**

- .1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative current Material Safety Data Sheet (MSDS) for each hazardous material required prior to bringing hazardous material on site.
- .3 Submit hazardous materials management plan to Departmental Representative identifies hazardous materials, their use, their location, personal protective equipment requirements, and disposal arrangements.

**1.4 STORAGE AND HANDLING**

- .1 Co-ordinate storage of hazardous materials with Departmental Representative abide by internal requirements for labelling and storage of materials and wastes.
- .2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.
- .3 Store and handle flammable and combustible materials in accordance with current National Fire Code of Canada requirements.
- .4 Keep no more than forty-five (45) litres of flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use.
  - .1 Store flammable and combustible liquids in approved safety cans bearing the Underwriters' Laboratory of Canada or Factory Mutual seal of approval.

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- .2 Storage of quantities of flammable and combustible liquids exceeding forty-five (45) litres for work purposes requires the written approval of the Departmental Representative.
  - .5 Transfer of flammable and combustible liquids is prohibited within buildings.
  - .6 Do not transfer of flammable and combustible liquids in vicinity of open flames or heat-producing devices.
  - .7 Do not use flammable liquids having flash point below thirty-eight (38) degrees Celsius, such as naphtha or gasoline as solvents or cleaning agents.
  - .8 Store flammable and combustible waste liquids for disposal in approved containers located in safe, ventilated area. Keep quantities to minimum.
  - .9 Observe smoking regulations, smoking is prohibited in areas where hazardous materials are stored, used, or handled.
  - .10 Storage requirements for quantities of hazardous materials and wastes in excess of five (5) kg for solids, and five (5) litres for liquids:
    - .1 Store hazardous materials and wastes in closed and sealed containers.
    - .2 Label containers of hazardous materials and wastes in accordance with WHMIS.
    - .3 Store hazardous materials and wastes in containers compatible with that material or waste.
    - .4 Segregate incompatible materials and wastes.
    - .5 Ensure that different hazardous materials or hazardous wastes are not mixed.
    - .6 Store hazardous materials and wastes in secure storage area with controlled access.
    - .7 Maintain clear egress from storage area.
    - .8 Store hazardous materials and wastes in location that will prevent them from spilling into environment.
    - .9 Have appropriate emergency spill response equipment available near storage area, including personal protective equipment.
    - .10 Maintain inventory of hazardous materials and wastes, including product name, quantity, and date when storage began.
  - .11 Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements. Report spills or accidents immediately to Departmental Representative. Submit a written spill report to Departmental Representative within 24 hours of incident.

## **1.5 TRANSPORTATION**

- .1 Transport hazardous materials and wastes in accordance with federal Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations, and applicable provincial regulations.
- .2 If exporting hazardous waste to another country, ensure compliance with federal Export and Import of Hazardous Waste Regulations.
- .3 If hazardous waste is generated on site:
  - .1 Co-ordinate transportation and disposal with Departmental Representative.
  - .2 Ensure compliance with applicable federal, provincial and municipal laws and regulations for generators of hazardous waste.

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- .3 Use licensed carrier authorized by provincial authorities to accept subject material.
  - .4 Prior to shipping material obtain written notice from intended hazardous waste treatment or disposal facility that it will accept material and that it is licensed to accept this material.
  - .5 Label containers with legible, visible safety marks as prescribed by federal and provincial regulations.
  - .6 Ensure that trained personnel handle, offer for transport, or transport dangerous goods.
  - .7 Provide photocopy of shipping documents and waste manifests to Departmental Representative.
  - .8 Track receipt of completed manifest from consignee after shipping dangerous goods. Provide a photocopy of completed manifest to Departmental Representative.
  - .9 Report discharge, emission, or escape of hazardous materials immediately to Departmental Representative and appropriate provincial authority. Take reasonable measures to control release.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Only bring on site quantity of hazardous materials required to perform work.
- .2 Maintain MSDSs in proximity to where materials are being used. Communicate this location to personnel who may have contact with hazardous materials.

## **Part 3 Execution**

### **3.1 DISPOSAL**

- .1 Dispose of hazardous waste materials in accordance with applicable federal and provincial acts, regulations, and guidelines.
- .2 Recycle hazardous wastes for which there is approved, cost effective recycling process available.
- .3 Send hazardous wastes to authorized hazardous waste disposal or treatment facilities.
- .4 Burning, diluting, or mixing hazardous wastes for purpose of disposal is prohibited.
- .5 Disposal of hazardous materials in waterways, storm or sanitary sewers, or in municipal solid waste landfills is prohibited.
- .6 Dispose of hazardous wastes in timely fashion in accordance with applicable provincial regulations.
- .7 Minimize generation of hazardous waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.
- .8 Identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:
  - .1 Hazardous wastes recycled in manner constituting disposal.
  - .2 Hazardous waste burned for energy recovery.

- .3 Lead-acid battery recycling.
- .4 Hazardous wastes with economically recoverable precious metals.

**END OF SECTION**



**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Section 31 23 10 – Excavating, Trenching and Backfilling.
- .2 Section 32 91 19.13- Topsoil Placement and Grading.
- .3 Section 32 92 23- Sodding.

**1.2 REFERENCES**

- .1 Canadian Council of Ministers of the Environment (CCME)
  - .1 CCME PN 1326-2003, Environmental Code of Practice for Underground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products.
  - .2 CCME PN 1299-2006, Canadian Environmental Quality Guidelines.
    - .1 Chapter 7-2006, Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health.
- .2 Canadian Federal Legislation
  - .1 Canadian Environmental Protection Act (CEPA), 1999, c. 33.
  - .2 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.

**1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide the following information on storage tank:
  - .1 Former contents.
  - .2 Location.
  - .3 Reason for removal.
- .3 Provide Departmental Representative with copy of vapour removal test results.
- .4 Forward affidavit of destruction of underground storage tanks to authority having jurisdiction.

**1.4 QUALITY ASSURANCE**

- .1 Contractor must be licensed/certified by Provincial authorities having jurisdiction for removal of underground storage tanks.
  - .1 License/certificate, title and number must accompany tender document.
  - .2 Regulatory Requirements: ensure Work is performed in compliance with CEPA, TDGA and applicable Provincial regulations.

**1.5 DELIVERY, STORAGE AND HANDLING**

- .1 Waste Management and Disposal:

- .1 Separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Divert metal materials from landfill to metal recycling facility.
- .3 Segregate and deliver non-salvageable or non-recyclable materials, including waste liquids and sludges to Provincially licensed waste facility.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 PREPARATION SAFETY AND SECURITY**

- .1 Conform to or exceed Federal, Provincial and Territorial codes, local municipal by-laws, by-laws, and codes and regulations of utility authorities having jurisdiction.
- .2 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .3 Protection:
  - .1 Meet safety requirements of Occupational Safety and Health, Canada Labour Code Part II and Regulations for Construction Projects.
  - .2 Disconnect or remove source of ignition from vicinity of tank.
  - .3 Provide temporary protection for safe movement of personnel and vehicle traffic.
  - .4 Cut, braze or weld metal only in monitored areas established to be free of ignitable vapour concentrations.
  - .5 Ground and bond metal equipment, including tanks and transfer pipes, before operating equipment or transferring flammable materials.
  - .6 Use non-sparking tools and intrinsically safe electrical equipment.
  - .7 Smoking is not permitted.

**3.2 DRAINING**

- .1 Drain and flush piping into tank.
- .2 Pump out liquid from tank
  - .1 Use explosion proof, air driven or hand pump.
- .3 Remove sludge from tank bottom.
  - .1 Dispose of product and sludge in accordance with local, Provincial and Territorial regulations using waste disposal carrier licensed by Provincial/Territorial Environmental Agency having jurisdiction.

**3.3 EXCAVATION TRENCHING AND BACKFILL**

- .1 Do work in accordance with Section 31 23 10 - Excavation, Trenching and Backfilling.

- .2 Provide protective material around excavation.
- .3 Provide constant supervision during excavation and backfilling.
- .4 Excavation:
  - .1 Excavate until top of tank and connections and openings are exposed.
  - .2 Disconnect piping:
    - .1 Remove fill tube.
    - .2 Disconnect fill gauge, product and vent lines.
    - .3 Remove piping from ground.
  - .3 Temporarily plug tank openings.
  - .4 Continue excavation until tank is completely exposed.
  - .5 Temporarily stockpile on site soil in vicinity of tank, until waste classification can be established prior to re-using material as backfill.
  - .6 Engage qualified laboratory for soil testing to verify excavated soil meets the guidelines of Chapter 7 of CCME PN 1299 for re-use as backfill.
  - .7 Immediately notify Departmental Representative should soil testing indicate material is unsuitable for re-use as backfill and await written instructions prior to proceeding.
- .5 Prevent movement, settlement or damage of adjacent services, landscaping, and adjacent grades. Provide shoring as required.

### **3.4 TANK REMOVAL**

- .1 Remove tank in accordance with CCME Code of Practice PN 1326 and/or applicable provincial standards and regulations, and place in secure location.
- .2 Block tank to prevent movement.
- .3 Contact Departmental Representative immediately if there is evidence of contamination in tank excavation, stop Work until further notice.
- .4 Backfill excavation with excavated material once results from soil testing confirm material is acceptable for re-use. Provide copy of laboratory analysis results to Departmental Representative. Supplemental backfill material to confirm to Type 1 Fill, refer to Section 31 23 10 - Excavating, Trenching and Backfilling.

### **3.5 VAPOUR REMOVAL**

- .1 Purging:
  - .1 Purge vapours to less than 10% of lower explosive limit (LEL).
  - .2 Verify with combustible gas metre.
- .2 Inverting:
  - .1 Displace oxygen to levels below necessary to sustain combustion.
  - .2 Verify with combustible gas metre.
- .3 Water Method:

- .1 Fill tank with water to expel vapours.
- .2 Remove and dispose of contaminated water in accordance with regulations after tank is removed from site.
- .3 Verify with combustible gas metre.
- .4 Dry Ice Method:
  - .1 Add 1.85 gm of solid carbon dioxide (dry ice) for each 100 litre capacity.
  - .2 Crush and distribute ice evenly over greatest area to secure rapid evaporation. Avoid skin contact.
  - .3 Verify dry ice has vapourized.
- .5 Air Method:
  - .1 Ventilate tank with air using small gas exhaustor operated with compressed air.
  - .2 Air to enter opening at one end and to exit opening at other end to quickly remove vapour.
  - .3 Test interior of tank to determine when tank is free of vapour.

### **3.6 CAPPING**

- .1 Plug holes after tank has been freed of vapours and before tank is moved from site.
  - .1 Leave vents open.
- .2 Plug corrosion leak holes using screwed (boiler) plugs.
- .3 Leave 3 mm vent hole in one plug to prevent tank from being subjected to excessive pressure differential caused by extreme temperature change.

### **3.7 SECURING AND REMOVAL FROM SITE**

- .1 Check vapour levels prior to transport:
  - .1 Remove vapour if required.
- .2 Dispose of tank in accordance with local, Provincial, Federal or Territorial regulations.
- .3 Truck removal:
  - .1 Secure tank on truck for transport to disposal site.
  - .2 Cut suitable openings in tank sides to render tank unusable.
  - .3 Ensure 3 mm vent hole located at uppermost point on tank.

### **3.8 WORKMANSHIP AND DISPOSAL**

- .1 Tanks destined for disposal:
  - .1 Dismantle, cut sufficient openings or otherwise render unusable.

### **3.9 REINSTATEMENT**

- .1 Reinstate surface with topsoil and sod, refer to section 32 91 19.13- Topsoil Placement and Grading and Section 32 92 23- Sodding .

**END OF SECTION**